Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII • EXAMINATION – SUMMER 2014

Subject Code: 181104 **Date: 31-05-2014**

Subject Name: Advanced Microprocessors

Time: 10:30 am TO 01:00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Tabulate the addressing modes possible with 8086 Family Processors. Explain any five giving examples of each.	**07**
	(b)	Explain Protected Mode Addressing along with the need of designing this special mode as compared to Real Mode Addressing.	**07**
Q.2	**(a)**	Explain following Instructions with appropriate example. (1) REP (2) POP (3) XLAT Discuss Results after Execution of following instructions (ARRAY is Label) (1) LEA BX,ARRAY (2) MOV EAX,[BP+200] (3) OUT DX,AL (4) MOVZX DX,AL	**07**
	(b)	What do you understand by the term "Bus Timing"? Explain with reference to Read and Write operations of memory interfaced with 8086 with neat sketch.	**07**
		OR	
	(b)	Explain the usefulness of READY pin on x86 Family of Processors. Show a sample usage of READY pin using a simplified neat sketch.	**07**
Q.3	**(a)**	What do you understand by Address Decoding? List various techniques of Address Decoding for Memory interfacing using 8086 and explain any two among them.	**07**
	(b)	Design a memory interfacing for interfacing a 2 kB Static RAM with 8086, show schematic along with memory map.	**07**
		OR	
Q.3	**(a)**	Which way Input and Output Ports differ with each other? Explain (with neat sketches) how Programmable Peripheral Interface ICs help in interfacing bidirectional ports.	**07**
	(b)	Interface 16-bit-wide Output Port at Port Addresses 2000H and 2001H with 8086. Show interfacing schematic and address mapping.	**07**
Q.4	**(a)**	Write an assembly language program to produce a packed BCD byte from 2 ASCII encoded digits. Assume appropriate data mentioning the assumption.	**07**
	(b)	Write an assembly language program that will switch the Fan ON when temperature reaches 30°C and will switch the Fan OFF when temperature reaches 20°C. Assume appropriate hardware showing brief schematic.	**07**
		OR	
Q.4	**(a)**	Write an assembly language routine or macro to compare two memory blocks. Store the result of comparison at the end of first memory block. Assume appropriate data mentioning the assumption.	**07**
	(b)	Write an Interrupt Service Subroutine that will read the key press upon interruption and will show the key-code on display. Assume appropriate hardware showing brief schematic.	**07**
Q.5	**(a)**	Explain task switching in context of 80386. How many different ways task switching can be accomplished?	**07**
	(b)	Describe the advancements done in the Pentium series of processors as compared to its predecessors.	**07**
		OR	
Q.5	**(a)**	What is the use of paging mechanism? Show how paging is done in any of x 86 families of processors.	**07**
	(b)	Write a short-note on Hyper-Threading Technology employed in Pentium Processors.	**07**

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